

AMENDMENTS TO THE DRAWINGS:

The attached sheets of drawings include the Examiner's requested changes to FIGS. 1 and 2. Specifically, Applicants have amended FIGS. 1 and 2 to include their descriptive texts, including descriptions for the calculations of the probability and complexity functions and the steps of the disclosed test routine. Applicants attach Replacement Sheets including the corrected figures and Annotated Sheets showing where changes have been made.

Attachments: Replacement Sheets of FIGS. 1 and 2
Annotated Sheets showing changes to FIGS. 1 and 2

REMARKS

Applicants submit this Reply in response to the non-final Office Action mailed March 20, 2008. Before this amendment, claims 16-30 were pending, of which claims 16, 23, and 25 were independent. In this Reply, Applicants have amended claims 18 and 23 and canceled claim 24 without prejudice or disclaimer. Accordingly, claims 16-23 and 25-30 are currently pending, of which claims 16, 23, and 25 are independent.

In the non-final Office Action, the Examiner objected to the drawings for lacking certain descriptive text in their flowcharts. The Examiner rejected claims 23 and 24 under 35 U.S.C. § 101 as being directed toward a non-statutory computer program. The Examiner rejected claims 16, 21, 25, and 29 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2004/0095887 ("Klincewicz") in view of U.S. Patent Application Publication 2002/0186665 ("Chaffee") and U.S. Patent Application Publication 2002/0097716 ("Kumaran"). Finally, the Examiner identified allowable subject matter in claims 17-20, 22, 26-28, and 30.

Drawings Objections

The Examiner objected to the drawings for failing to show "the calculation of the probability function and the complexity function and the steps of the test routine." See Office Action at ¶ 1. The Examiner also objected to the drawings because FIGS. 1 and 2 show steps of a flowchart that need to be accompanied by descriptive texts. See Office Action at ¶ 2.

Applicants submit the attached Replacement and Annotated Sheets corresponding to FIGS. 1 and 2 include, among other things, descriptive texts for the calculation of the probability and complexity functions (FIG. 1) and the steps of the test

routine (FIG. 2). In view of these revised drawings, Applicants respectfully submit that the pending drawings objections should be removed.

Rejections Under 35 U.S.C. § 101

The Examiner rejected claims 23 and 24 under 35 U.S.C. § 101 because they appeared to be directed toward a computer program which is not patentable subject matter. See Office Action dated March 20, 2008, at ¶ 3.

Independent claim 23, as presently amended, recites, among other things, a "computer readable medium comprising computer program code executable by a computer, the computer program code configured to perform a method of designing a transport network for routing a plurality of routable flows" Applicants respectfully submit that the computer readable medium recited in amended independent claim 23 complies with the statutory requirements of Section 101.

It is well established that "a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory." M.P.E.P. § 2106.01(I) (emphasis added). Moreover, "[w]hen functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized." M.P.E.P. § 2106.01.

For at least the reasons set forth in M.P.E.P. § 2106.01, the "computer readable medium comprising computer program code executable by a computer . . . ," as recited

in amended independent claim 23, comprises a tangible, functional element that is not merely drawn to a form of energy and is statutory in accordance with 35 U.S.C. § 101.

Rejections Under 35 U.S.C. § 103(a)

Applicants respectfully traverse the Section 103(a) rejections of claims 16, 21, 25, and 29. To establish a *prima facie* case of obviousness, “All Claim Limitations Must Be Considered.” M.P.E.P. § 2143.03 (8th ed., rev. 6, Sept. 2007). More specifically, the M.P.E.P. requires that “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.” *Id.* (quoting *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970)). Applicants submit that a *prima facie* case of obviousness has not been established for at least the reason that the cited art, whether taken alone or in combination, fails to teach or suggest every element recited in Applicants’ independent claims 16, 23, and 25.

Independent claims 16, 23, and 25 each calls for a respective combination including, for example, “calculating for each of said first and any alternative network configuration, a complexity function calculated as the ratio between a sum of complexity factors relative to the network elements of the network configuration currently considered and said probability function” and “comparing the complexity functions of said first and any alternative network configurations, for choosing a network configuration having a lowest complexity value.” Applicants submit that the cited art, whether taken alone or in combination, fails to teach or suggest at least the “complexity function” recited in each of the independent claims 16, 23, and 25.

In the Office Action dated March 20, 2008, the Examiner acknowledges that “Klincewicz does not disclose the following features: regarding claim 16 and 25 . . .

calculating for each of said first and any alternative network configuration, a complexity function calculated as the ratio between a sum of complexity factors relative to the network elements of the network configuration currently considered and said probability function." Office Action at ¶ 6, pages 6-7. Applicants respectfully submit that neither Chaffee nor Kumaran remedies the above-noted deficiency in Klincewicz.

Chaffee discloses a cost metric c_{jk} corresponding to the "cost of communicating whenever a message is sent." Chaffee at ¶ 0050. The metric c_{jk} is the network cost of transmitting a single message from a source node j to a destination node k . *See id.* Chaffee also defines an average cost C_{jk} of communicating the message over the j - k link. *See id.* at ¶ 0053. The average cost C_{jk} is calculated as a function of the cost metric c_{jk} multiplied by $(1-P_{jk})^N$, where P_{jk} is the probability of a successful message transmission and N is the maximum number of times that the message is transmitted over the j - k link. *See id.* at ¶ 0054. Chaffee discloses that the average cost C_{jk} is a geometric series that can be represented using various mathematically equivalent expressions. *See id.* at ¶¶ 0052-0054. However, each of these expressions is a function of the single cost metric c_{jk} . *See id.*

Applicants disagree with the Examiner's suggestion that the average cost metric C_{jk} in Chaffee can be equated with "a complexity function calculated as the ratio between a sum of complexity factors relative to the network elements of the network

configuration currently considered and said probability function," as recited in each of the independent claims 16, 23, and 25.¹

The average cost metric C_{jk} in Chaffee is a function of a single cost metric c_{jk} and, therefore, is not "calculated as the ratio between a sum of complexity factors relative to the network elements of the network configuration currently considered and said probability function," as claimed. That is, the summation disclosed in Chaffee is not performed over multiple "complexity factors" (plural). Instead, the summation in Chaffee is performed over the number of message transmissions, i.e., from zero ($n=0$) to a maximum number ($n=N$) of transmissions. See *id.* at ¶ 0053. In short, the average cost C_{jk} in Chaffee is not a running sum over different complexity factors, since only a single cost metric c_{jk} is used in the summation for calculating the average cost C_{jk} .

Because Chaffee does not disclose or suggest "a sum of complexity factors" (i.e., a sum of more than one complexity factor), Chaffee also fails to disclose or suggest at least "a complexity function calculated as the ratio between a sum of complexity factors relative to the network elements of the network configuration currently considered and said probability function," as recited in each of Applicants' independent claims.

In the Office Action dated March 20, 2008, the Examiner relies on Kumaran only for its alleged disclosure of "a probability function." See Office Action at ¶ 6, pages 7-8. Regardless of the accuracy of the Examiner's characterization of Kumaran, Applicants point out that the Examiner does not argue that Kumaran discloses or suggests "a

¹ The Office Action contains a number of statements reflecting characterizations of the Applicants' disclosure, including the claims, and the related art. Regardless of whether any such statement is specifically addressed herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

complexity function calculated as the ratio between a sum of complexity factors relative to the network elements of the network configuration currently considered and said probability function," as claimed. Indeed, Kumaran does not appear to disclose such a complexity function. Therefore, Kumaran does not cure the above-noted deficiencies in Klincewicz and Chaffee in the Examiner's combination of cited art.

Klincewicz, Chaffee, and Kumaran, whether taken singly or in combination, cannot render obvious Applicants' independent claims 16, 23, and 25, for at least the reason that each of these cited references fails to disclose or suggest at least "a complexity function calculated as the ratio between a sum of complexity factors relative to the network elements of the network configuration currently considered and said probability function," as recited in each of the claims 16, 23, and 25. Claims 17-22 and 26-30 depend on allowable independent claims 16 and 25 and are therefore allowable for at least the same reasons.

Conclusion

The preceding remarks are based only on the arguments in the Office Action, and therefore do not address patentable aspects of the invention that were not addressed by the Examiner in the Office Action. The claims may include other elements that are not shown, taught, or suggested by the cited art. Accordingly, the preceding remarks in favor of patentability are advanced without prejudice to other possible bases of patentability.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and timely allowance of

the pending claims. Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

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By: 
Stephen E. Kabakoff
Reg. No. 51,276
(404) 653 6477